

Work Order ID 75354

75354

Page 1

October-21-11 8:05:06 AM

Item ID: D350-636-018

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 02/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: M.C.J

Date: 11/10/21

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D3492 14168

A

Ad

IIN-D350-636

1

100

0.00

100

DOCUMENT CONTROL

DC

0.00

Document Control

Memo

Photocopy blue file and type labels per PPP D350-636-018 CHG 002

NAF

11.12.01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110		0.00							
110	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	1- Pick D2600-3 Bent								
	2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750								
	3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.								
	4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting								
	5- Drill fwd step holes using DT9616 detail AA . Ensure proper positioning.								
	6- Drill pilot holes using drill Jig DT8150 & DT8864A for first side only DT8864B for second side section BE-BE and BC-BC								
	7- Clecko DT8864B on second side of tube and drill pilot holes for section BE-BE and BC-BC ***SECOND SIDE***								
	8-Drill pilot holes for wearplates as per Dwg D4168 using DT9678. Locating from 66.54" holes.								
	9-Open up holes of Detail A to 0.297" (total of 2 holes per side) +.201" holes Detail AA.								
	10-Weld D2744 Cap as per Dwg D4168 and QSI 004.Fill grooves in bend left from bending as per QSI 004								
	A/R Aluminum Rod batch: MI18735								

BE11-117**11-11-16**

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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	11							

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 Required Date: 02/11/2011 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Grind welds flush as per Dwg D4168

Handwritten signature and date 11/17

120

QC10- Inspect visual per QSI004- ground welds

0.00

120

QC

Memo

0.00

Quality Control

130

QC5- Inspect part completeness to step on W/O

0.00

130

QC

Memo

0.00

Quality Control

Handwritten signature and date 11/17

Handwritten signature and date 11/17

W/O:		WORK ORDER CHANGES					
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Start Date: 20/10/2011 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 02/11/2011 **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

Chemical Conversion Coat per QSI005 4.1

0.00

140

HandFinish

Memo

0.00

Hand Finishing

150

QC3- Inspect Part Finish

0.00

150

QC

Memo

0.00

Quality Control

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 Required Date: 02/11/2011 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* Skidtubes Skidtubes	Skidtubes Memo 1-Open up holes of Detail AB and ground handling to 0.625" (total of 8 holes per side) as per dwg D4168. 2-Open up holes of wearplate holes to 0.375" section CK-CK (total of 4 holes per side) 0.3125" holes section BC-BC (4 per side) as per dwg D4168. 3- Open float hole to 0.500" (4 per side) 4-Chamfer holes dwg D4168 (welding instructions on sheet 11) 5-Deburr and blow out all chips from inside of tube 6- Prepare tube for welding, remove alodine as required. 7-Bond web D2739 in place as per QSI 015 A/R Sikaflex-291 batch: <u>119389</u> exp. date: <u>4/08/13</u> 8- Weld spacers as per dwg D4168 & QSI004 (welding instructions on sheet 11) A/R Aluminum Rod batch: <u>M113735</u> 9- Grind welds flush as per Dwg D4168 10-Spot face ground handling holes section (total of 4 places per side) as per dwg D4168	0.00 0.00							

Handwritten notes and signatures:
 11/11/18
 11/11/18
 11/11/21

W/O:		WORK ORDER CHANGES					
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1

Cust Item ID:

Required Date: 02/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11- C'bore section CK-CK

12- Deburr holes

~~***** FOR DELUXE SKIDTUBE IF APPLICABLE DRILL TOW RING
HOLE IN TUBE *****~~

170

QC10- Inspect visual per QSI004- ground welds 0.00

170

QC

Memo

0.00

Quality Control

180

QC5- Inspect part completeness to step on W/O 0.00

180

QC

Memo

0.00

Quality Control

11/11/21

Yes

Sulalzz

Sulalzz

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 *190* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.	0.00 0.00				1		BL 11-11-29.	
200 *200* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo START TIME: 11:40 OVEN TEMPERATURE: 320 OF FINISH TIME: 12:10	0.00 0.00						IXC m p 11/11/29	
210 *210* QC Quality Control	QC3- Inspect Part Finish Memo Inspect for foreign object per QSI 024	0.00 0.00				1		BL 11-11-29.	

W/O:		WORK ORDER CHANGES					
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 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220		0.00							
220	HandFinishing					<u>1</u>	<u>BR</u>	<u>11-11-29</u>	
HandFinish	Memo	0.00							
Hand Finishing	1- Install inserts as per Dwg D2750								
230		0.00							
230	HandFinishing					<u>1</u>	<u>BR</u>	<u>11-11-29</u>	
HandFinish	Memo	0.00							
Hand Finishing	1-Inspect for Foreign Objects								
	2-Spray inside of tube with "LPS-3" batch: <u>N/A.</u>								
	3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750								
	SIKA FLEX 241								
	BATCH: <u>119543</u>								
	EXP DATE: <u>12-1</u>								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube								
	A/R 55-o'ring lube batch: <u>110348</u>								
	5-Coat all exposed fasteners with "LPS Procyon" batch: <u>114596</u> ,								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Cust Item ID:

Required Date: 02/11/2011 Req'd Qty: 1.00

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00				<u>11</u>	<u>11</u>	<u>12</u>	<u>01</u> (1)
240									
QC	Memo	0.00							
Quality Control									
250	Pick Kit	0.00							
250									
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00				<u>11</u>	<u>11</u>	<u>12</u>	<u>01</u> (1)
260									
QC	Memo	0.00							
Quality Control	*****ensure antiseize is on AN8C21A bolts*****								

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 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
270	Packaging		PPP 76869			100	100		
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPPD350-636-018								
	Location: _____								
	PPP rev: _____								
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

11/12/15
 11-12-2
 A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

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Page 1

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Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC
11.04.14 ecn11-553 DD verf:EC
NCR 11-906 DD verf:EC

IPP Rev:B
IPP Rev:C 11.10.18 as per

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3490-1		Manufactured	No			160	Each	42.0000	4	4			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D3490-1

Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

40

67773

5

71841

35

LG001

2

62450

2

D3490-3		Manufactured	No			160	Each	42.0000	4	4			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D3490-3

Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

42

73295

42

AN3C34A		Purchased	No			230	Each	66.0000	1	1			
---------	--	-----------	----	--	--	-----	------	---------	---	---	--	--	--

AN3C34A

BOLT

Location

Loc Qty

Loc Code

ST353

66

116075

42

117514

20

118838

4

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Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C36A

Purchased

No

230

Each

156.0000

4

4

AN3C36A

BOLT

**

11-11-30

Location

Loc Qty

Loc Code

FG

101261

116590

ST353

116590

119083

119125

119324

14

4

10

142

0

12

30

100

4.

AN3C37A

Purchased

No

230

Each

139.0000

1

1

AN3C37A

BOLT

**

5

Location

Loc Qty

Loc Code

ST354

116874

117010

118518

118709

119324

139

11

2

51

50

25

1

AN3C42A

Purchased

No

230

Each

45.0000

1

1

AN3C42A

BOLT

**

11/12/12

Location

Loc Qty

Loc Code

ST354

106176

117763

118131

118451

45

2

20

20

3

1

W/O:		WORK ORDER CHANGES					
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Parent Item: D350-636-018

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Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3488-042 Manufactured No

230 Each 18.0000 1 1

D3488-042

Blade Fitting Assembly, RH

**

11-11-30
359230

Location

Loc Qty

Loc Code

FP008

18

62003

1

69904

6

71883 ✓

11

D3490-5 Manufactured No

230 Each 36.0000 4 4

D3490-5

Cross Bolt Spacer

**

BE 11/1/19
359230 +4

Location

Loc Qty

Loc Code

LG001

36

59230

36

D3492-1 Manufactured No

230 Each 158.0000 8 8

D3492-1

Plug

**

11-11-30

** 3492-041*

Location

Loc Qty

Loc Code

FP

158

69531

8

73402

70

74444

80

D3492-5 Manufactured No

230 Each 48.0000 8 8

D3492-5

Plug

**

11-12-1

Location

Loc Qty

Loc Code

FP

48

69533

8

70698 ✓

40

2

6

W/O:		WORK ORDER CHANGES					
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-21-11 8:05:10 AM

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3873-1 Manufactured No

230

Each

356.0000

7

7

D3873-1

Bushing

**

PR 11-11-30

Location

Loc Qty

Loc Code

ST088

75481

356

64760

1

68247

4

73829

19

73831

332

D4154-041

Manufactured No

230

Each

4.0000

1

1

D4154-041

Wearplate Assembly

**

PR 11-11-30

Location

Loc Qty

Loc Code

FP

74074

4

71442

4

D4170-1

Manufactured No

230

Each

36.0000

4

4

D4170-1

Bushing

**

BE 11-11-30

Location

Loc Qty

Loc Code

LG

32

68225

1

71844

31

LG002

4

65912

4

D4171-1

Manufactured No

230

Each

10.0000

1

1

D4171-1

Bushing

**

BE 11-11-30

Location

Loc Qty

Loc Code

ST135

10

69037

10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-21-11 8:05:10 AM

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

MS21043-3 Purchased No

230

Each

921.0000

5

5

MS21043-3

**

Nut

PR 11-11-30

Location

Loc Qty

Loc Code

FG

72

103691

72

ST301

849

118077

1

118614 ✓

492

118686

356

5

NAS1149C0363R

Purchased

No

230

Each

3,939.000

9

9

NAS1149C0363R

**

Washer

PR 11-11-30

Location

Loc Qty

Loc Code

ST297

3939

114742 ✓

3939

9

NAS1515H3L

Purchased

No

230

Each

111.0000

4

4

***NAS1515H3L ***

**

WASHER

PR 11-11-30

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

71

113362

57

118686

14

4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 6

October-21-11 8:05:10 AM

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1611-005

Purchased

No

230

Each

160.0000

8

8

NAS1611-005

O-RING

**

BL 11-12-11

Location

Loc Qty

Loc Code

FP002

119438

160

8

106099

55

114220

105

NAS1611-010

Purchased

No

230

Each

105.0000

8

8

NAS1611-010

O-RING

**

BL 11-11-30

Location

Loc Qty

Loc Code

FP

119438

81

8.

117460

8

118077

1

118612

72

FP-A

24

110915

14

119307

10

NAS1149D0863J

Purchased

No

250

Each

230.0000

2

2

NAS1149D0863.J

WASHER

**

BL 11-11-30

Location

Loc Qty

Loc Code

ST298

230

118078 ✓

130

119307

100

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 7

October-21-11 8:05:10 AM

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

D2744 Manufactured No

110 Each 63.0000 1 1

D2744

Cap

**

BE11-11-17

Location	Loc Qty	Loc Code
LG002	13	
62715	1	
70881	12	
WA	50	
71861	50	1

D2600-3-BENT

Manufactured No

110 Each 41.0000 1 1

D2600-3-BENT

Extrusion Bent

**

Location	Loc Qty	Loc Code
LG	41	
66875	8	
73253	3	
75021	10	
75022	10	
75023	10	

D2743

Manufactured No

160 Each 201.0000 8 8

D2743

Crossbolt Spacer

**

BE11-11-19

Location	Loc Qty	Loc Code
LG	143	
71839	79	
73403	64	
LG001	58	
67766	4	
68251	54	8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 8

October-21-11 8:05:10 AM

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

D2739 Manufactured No

160 Each 9.0000 1 1

D2739

350 I Beam

**

Location	Loc Qty	Loc Code
LG	9	
72155	2	
72156	3	
72157	4	

①

DL
11/11/18

ALS4-1032-225 Purchased No

230 Each 2,610.000 4 4

AI S4-1032-225

Insert

**

Location	Loc Qty	Loc Code
ST282	2610	
108696	758	
110768	62	
118386	860	
118966 ✓	930	

4.

BL 11-11-30.

AN8C35A Purchased No

230 Each 113.0000 1 1

AN8C35A

BOLT

**

Location	Loc Qty	Loc Code
FP	77	
117511	11	
118286 ✓	66	
FP-A	1	
115960	1	
ST345	34	
117834	34	
ST346	1	
114442	0	
115188	0	
115960	1	

1

BL 11-11-30.

October-21-11 8:05:10 AM

Shop Packet Print

Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-21-11 8:05:10 AM

Page 9

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

AN6C44A Purchased No

230 Each 113.0000 4 4

AN6C44A

BOLT

**

BL 11-11-30.

Location

Loc Qty

Loc Code

FG

119530.

2

103964

2

ST343

111

118387

41

118985

40

119125

30

H.

MS21083C8

Purchased No

230 Each 92.0000 1 1

MS21083C8

NUT

**

BL 11-11-30.

Location

Loc Qty

Loc Code

FP-B

1

115884

1

ST293

6

118077

6

ST303

85

115884

0

118354

10

118614

50

119309

25

1

D3631-1

Manufactured No

230 Each 107.0000 8 8

D3631-1

Washer

**

BL 11-11-30.

Location

Loc Qty

Loc Code

ST072

75548.

107

68062

107

8.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-21-11 8:05:10 AM

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

AN960C10L

NAS1149C0332R

Purchased

No

230

Each

0.0000

4

4

***AN960C10L ***

119736

**

4.

BK 11-11-30

washer

D2745

Manufactured

No

230

Each

165.0000

8

8

D2745

**

BK 11-11-30

Bushing

Location

Loc Qty

Loc Code

FP-A

3

69529

3

ST021

162

71835

162

NAS1149C0832R

Purchased

No

230

Each

345.0000

1

1

NAS1149C0832R

**

BK 11-11-30

WASHER

Location

Loc Qty

Loc Code

FP-B

17

114915

17

ST297

328

114915

328

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Picklist Print

October-21-11 8:05:10 AM

Page 11

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

232.0000

4

4

AN3C6A

BOLT

**

11-11-30.

Location

Loc Qty

Loc Code

FP-A

1

111982

1

ST351

231

111982

2

116419

23

116549

2

116704

12

117619

10

117688

1

117872

5

118422

176

MS21043-6

Purchased

No

230

Each

505.0000

4

4

MS21043-6

NUT

**

11-11-30.

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

485

112314

275

117887

10

118384

200

D3493-1

Manufactured

No

250

Each

55.0000

2

2

D3493-1

Washer

**

11/12/11

Location

Loc Qty

Loc Code

ST062

55

70697

17

71846

38

October-21-11 8:05:10 AM

Shop Packet Print

Page 11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Picklist Print

October-21-11 8:05:10 AM

Work Order ID: 75354

75354

Parent Item: D350-636-018

D350-636-018

Parent Item Name: Skidtube w/ Training Wearplates, RH

Start Date: 20/10/2011

Required Date: 02/11/2011

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

250

Each

92.0000

2

2

MS21083C8

NUT

**

BR 11-11-30

Location

Loc Qty

Loc Code

FP-B

1

115884

1

ST293

6

118077

6

ST303

85

115884

0

118354

10

118614 ✓

50

119309

25

2

AN8C21A

Purchased

No

250

Each

69.0000

2

2

AN8C21A

BOLT

**

BR 11-11-30

Location

Loc Qty

Loc Code

ST343

69

118045 ✓

19

118758

50

2

D2741

Manufactured

No

250

Each

19.0000

1

1

D2741

Blade, 350 Skidtube

**

Location

Loc Qty

Loc Code

ST466

19

70667

19

71856

1

11/11/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 75354 M.C.J
11/10/21

RELEASED
2010-09-15

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
1				D4168-1	SKIDTUBE WELDMENT, LH
	1			D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149CO363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149CO332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149CO832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- 1) MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- 8) WELD PER DART QSI 004
- 9) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 10) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- 11) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

A	NEW ISSUE	DESCRIPTION	SC	10.08.09
REV.			BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.		
DRAWN	SC	PORT HADLOCK, WA		
CHECKED		DRAWING NO.	REV. A	
MFG. APPR.		D4168	SHEET 1 OF 11	
APPROVED		TITLE	SCALE	
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS	
DATE	10.08.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

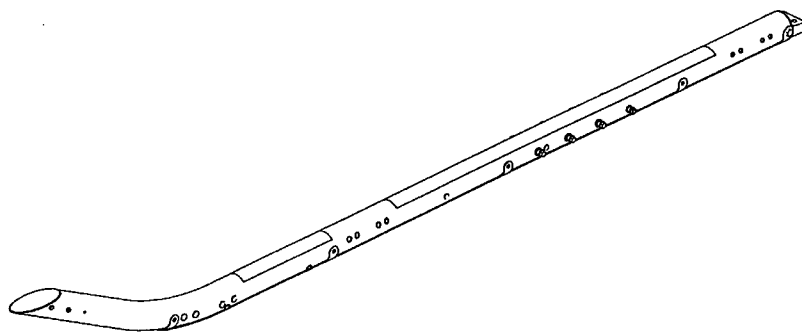
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

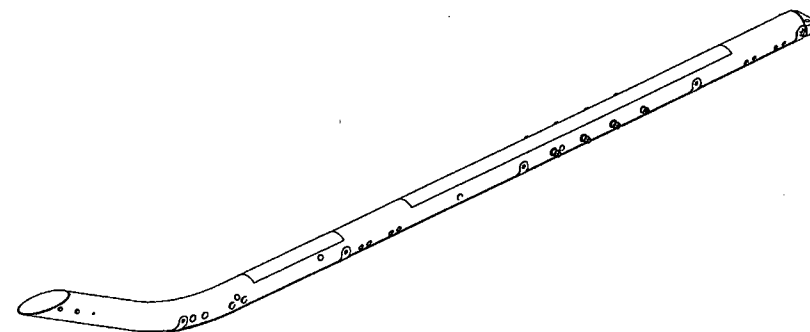
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

75354



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15
JW

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	SC	DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 2 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED IN THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

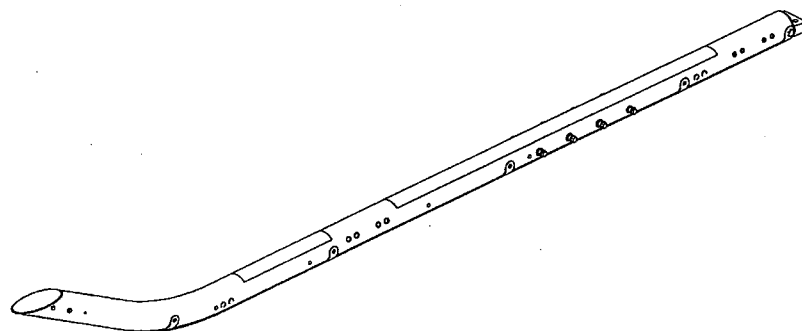
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

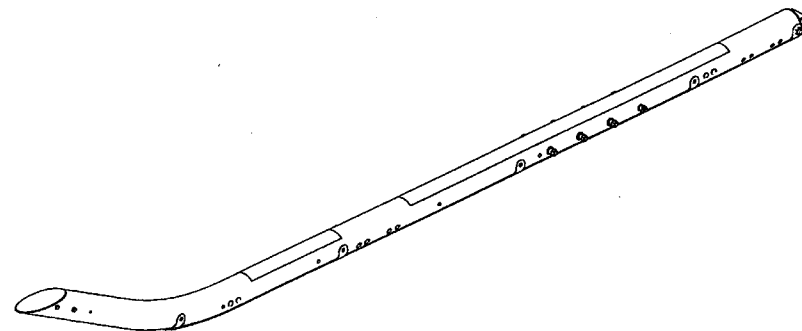
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

75354



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 3 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

D4168-1 LH SKIDTUBE

DETAIL A
SCALE 2X

DETAIL B
SCALE 2X

DETAIL C
SCALE 2X

DETAIL D
SCALE 2X

SECTION E-E
SCALE 3X, 2 PL

SECTION G-G
SCALE 3X, 4 PL

SECTION H-H
SCALE 3X, 4 PL

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DESIGN	SC	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	SC		
CHECKED	SC	DRAWING NO. D4168	REV. A
MFG. APPR.			SHEET 4 OF 11
APPROVED		TITLE 350 SKIDTUBE ASSEMBLY	SCALE NTS
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DATE	10.08.09		

SECTION H-H		B2-4	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
SCALE 3X, 4 PL				
DESIGN	SC		DRAWING NO.	REV. A
DRAWN	SC		D4168	SHEET 4 OF 11
CHECKED			TITLE	SCALE
MFG. APPR.			350 SKIDTUBE ASSEMBLY	NTS
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

D4168-2 RH SKIDTUBE

DETAIL J
SCALE 2X
D8-5

DETAIL K
SCALE 2X
C7-5

DETAIL L
SCALE 2X
A4-1

DETAIL M
SCALE 2X
A2-5

SECTION N-N
SCALE 3X, 2 PL
C6-5

SECTION Q-Q
SCALE 3X, 4 PL
B5-5

B3-5

DESIGN	SC	DART AEROSPACE USA, INC. PORT HADLOCK, WA DRAWING NO. D4168 TITLE 350 SKIDTUBE ASSEMBLY SCALE NTS <small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR TRANSMITTED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>
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APPROVED		
DE APPR.		REV. A SHEET 5 OF 11
DATE	10.08.09	

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2010-09-15
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2010-09-15
MD

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

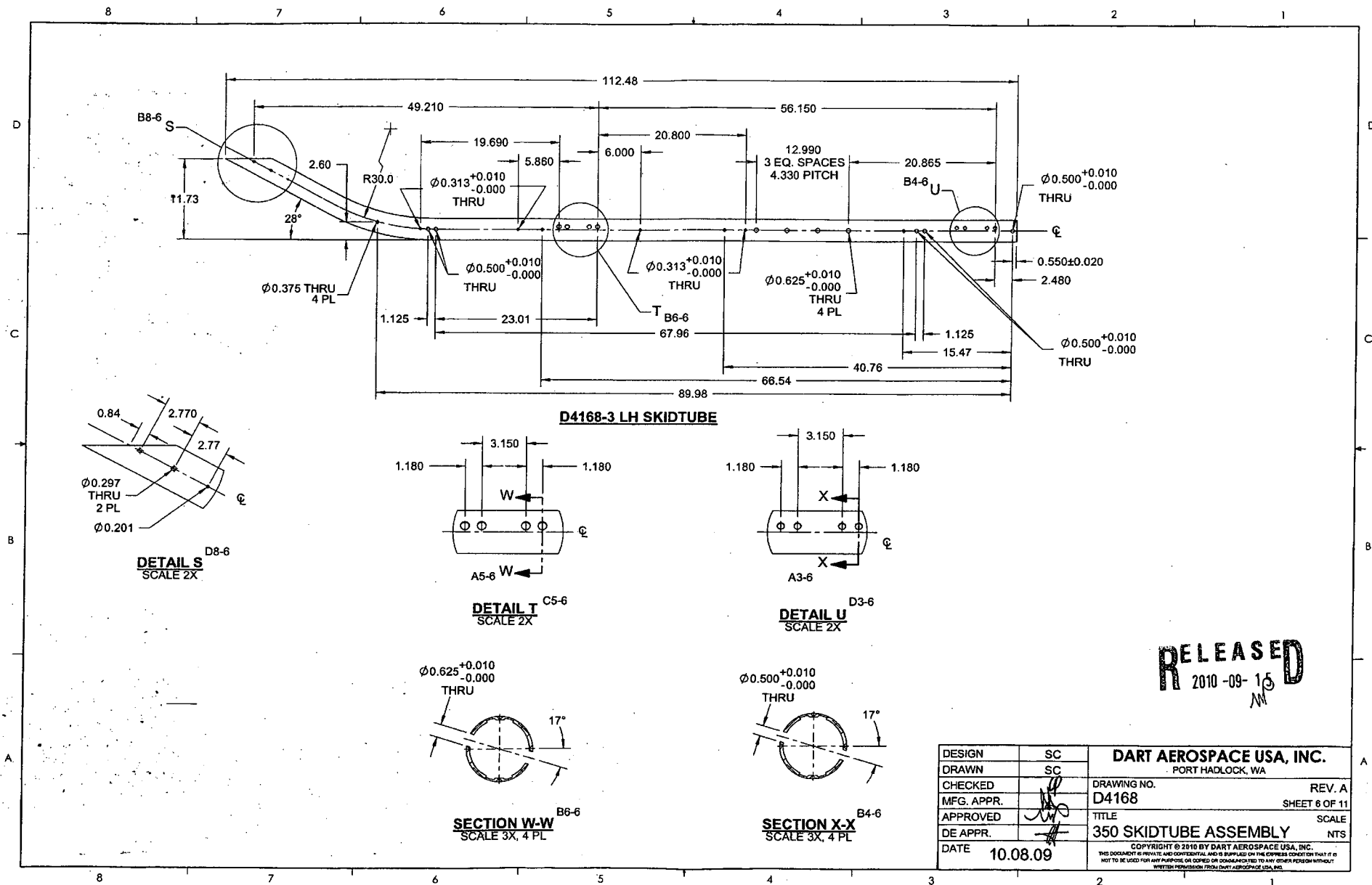
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NOTE: Date & initial all entries

75354



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2010-09-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

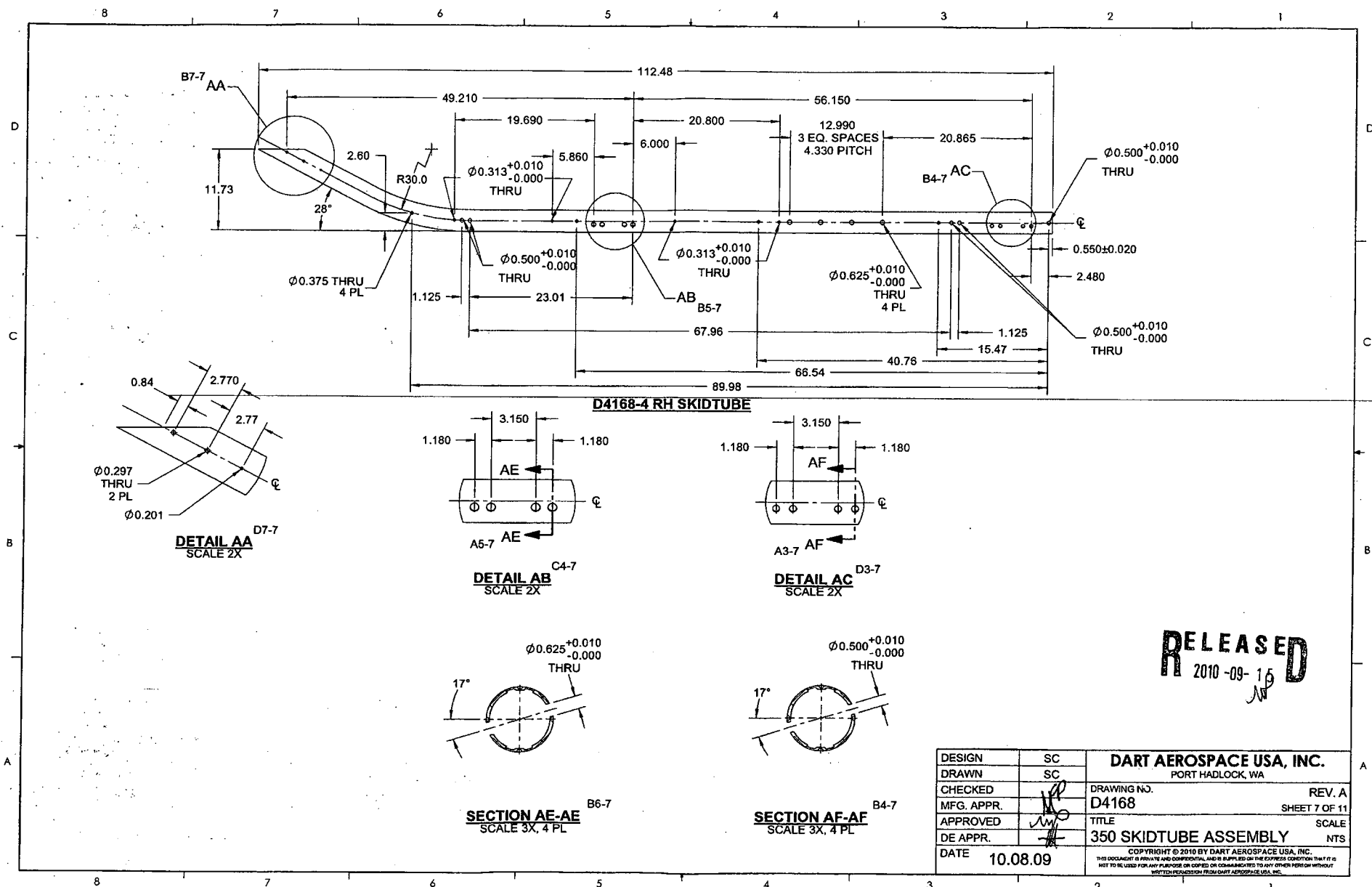
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NOTE: Date & initial all entries

75354



RELEASED
2010-09-15

W/O:		WORK ORDER CHANGES					
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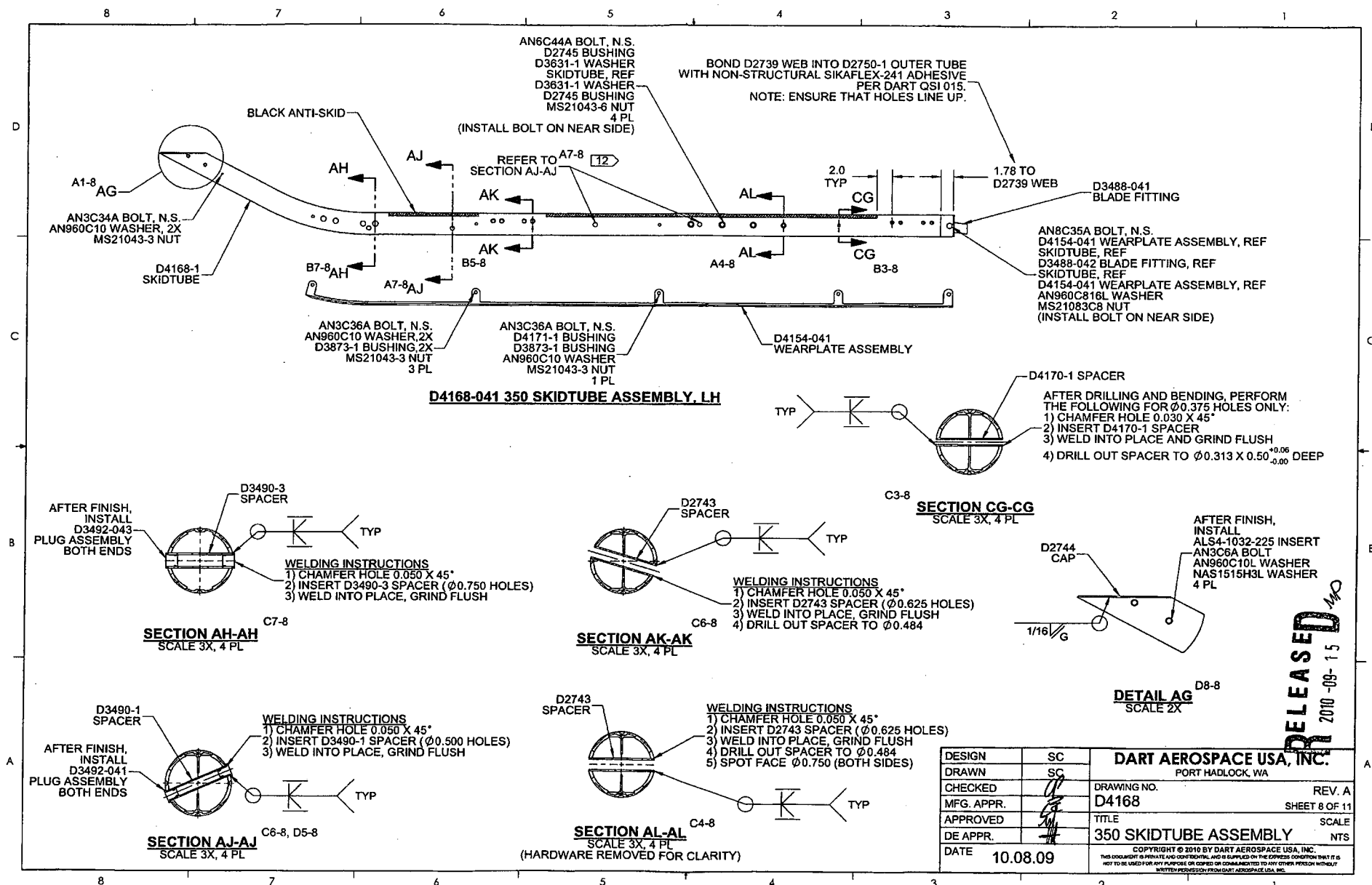
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75354

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2010-09-15

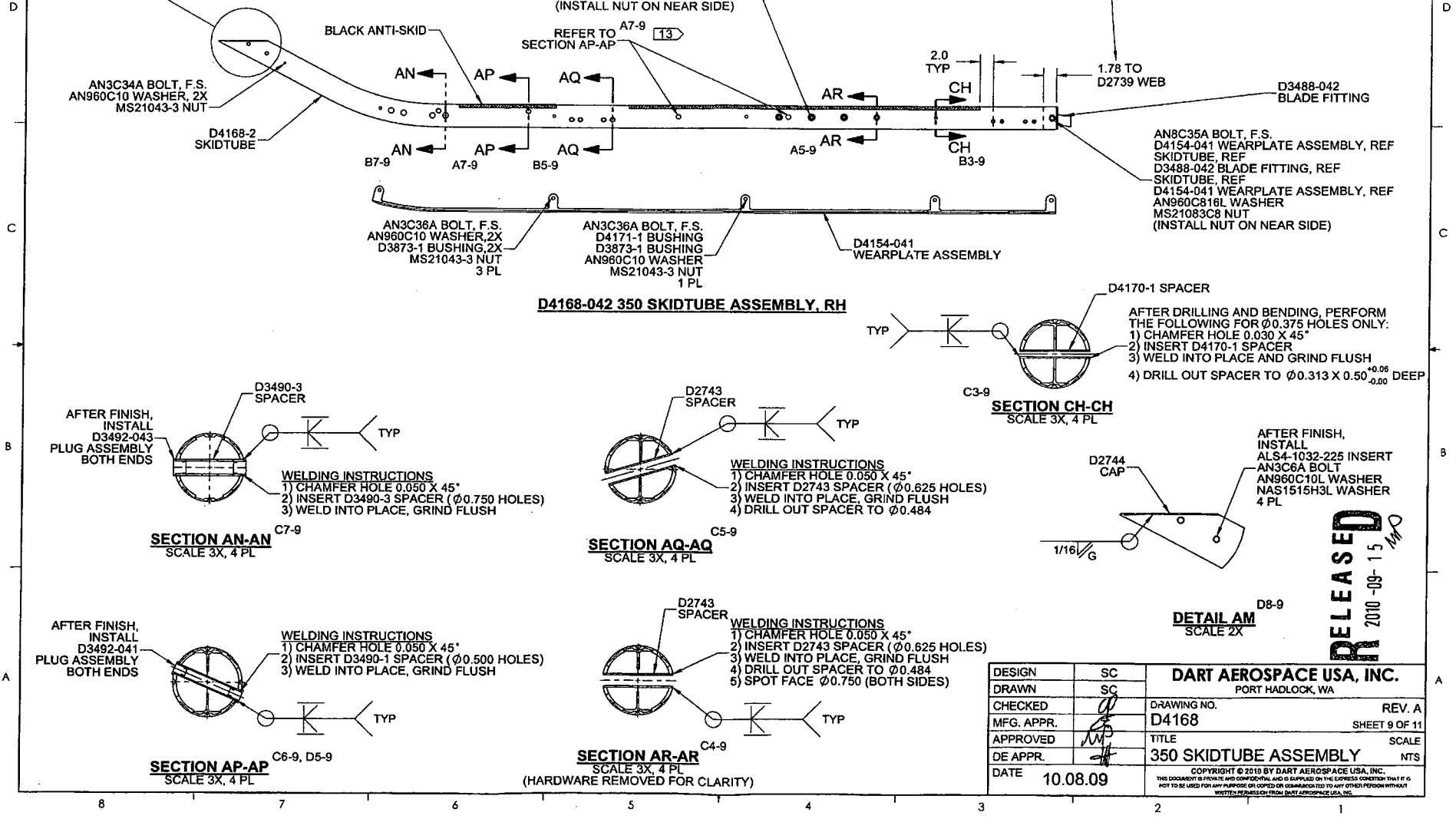
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DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>CP</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>MP</i>	D4168	SHEET 9 OF 11
APPROVED	<i>MP</i>	TITLE	SCALE
DE APPR.	<i>TH</i>	350 SKIDTUBE ASSEMBLY	NTS
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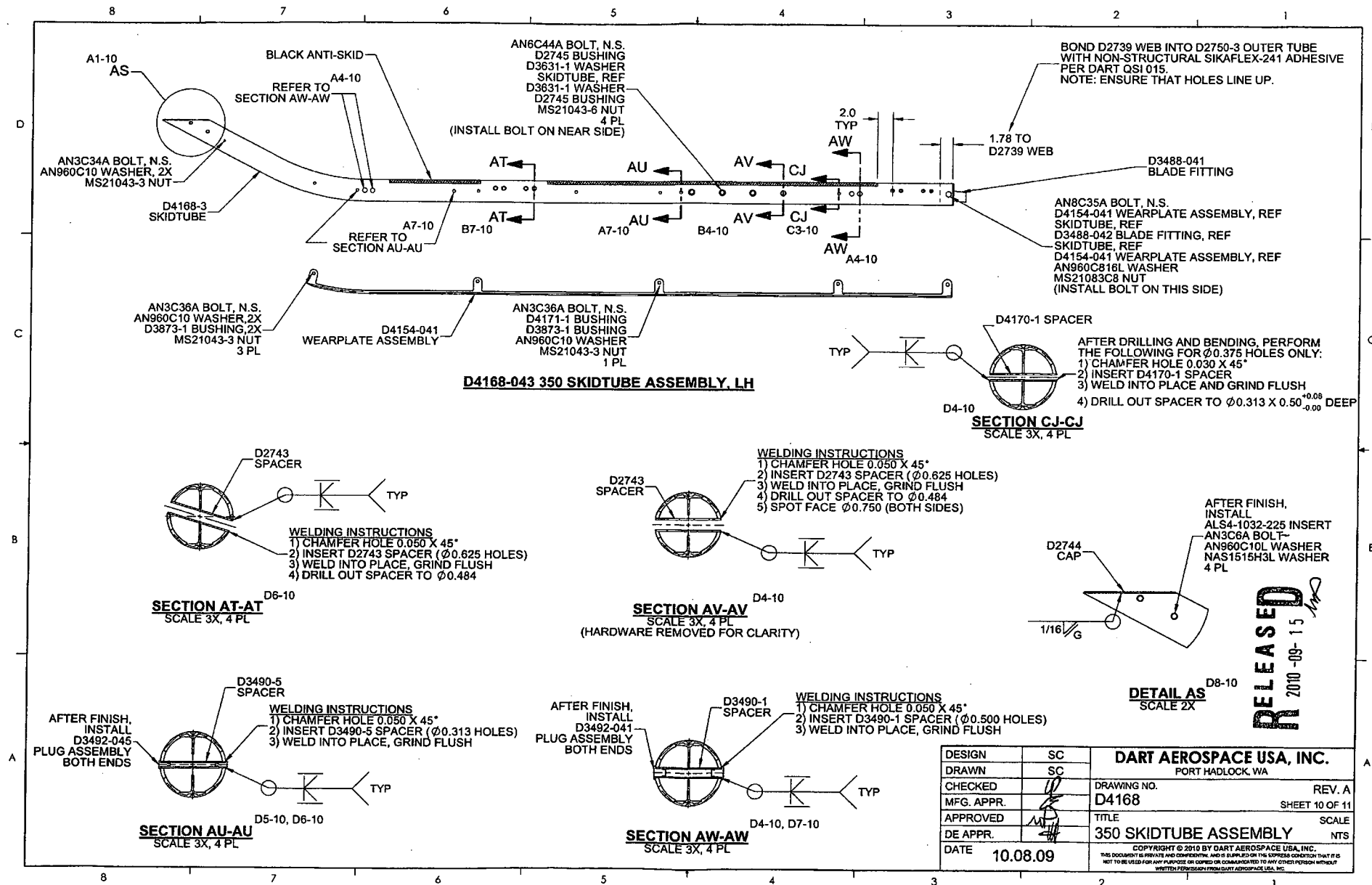
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[illegible]

2010-09-15

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 270

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: B 72821
Part number: D 350 636 012
Description: 350 skid tube
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat Lums Date of Test Coupon 11-10-07

Welder Barclay Elliott Date of Test Coupon 11-10-07

The above named individual is qualified in accordance with AWS D17.1.2001 to weld